

TV TUNERS

INTRODUCTION

Digital TV has brought us an abundance of TV channels, but the quality of much of this content is poor. Investing in a media centre PC or personal video recorder (PVR) such as Sky+ lets you cherry-pick your viewing using an electronic programme guide, schedule the recordings and watch them at a time that suits you. However, media centre PCs and PVRs don't come cheap.

A much cheaper solution is your humble desktop PC. It probably came with an LCD monitor for a crisp image and a big hard disk that's ideal for storing programmes. All you need to add is a TV tuner and you've got a full personal video recorder (PVR), not to mention an extra TV for your home.

This month, we test 12 TV tuners. These start at a mere £22 including VAT, but spend a little more and you also get features such as dual tuners and analogue video capture. So pick a tuner and start enjoying TV on your own terms.

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NAME THAT TUNER

With a decent screen and large hard disk, your PC will make the perfect TV and video recorder. Just add one of the 12 TV tuners in this round-up

Choosing a... TV Tuner

When choosing a TV tuner, you must consider whether you want an internal or external model, the kind of broadcasts you want to receive and even the operating system of your PC. We'll help you find a tuner that suits your needs.

PLUG AWAY

First you need to decide how you're going to connect your new TV tuner to your PC. The neatest option for a desktop PC is to fit an internal tuner, using a PCI or PCI Express slot. Check your PC and motherboard manual to make sure you have a free slot of the appropriate type. Some slimline PC cases use half-height expansion cards – both AVerMedia's Super 007 and Compro's VideoMate E700 fit these slender cases.

If your PC has no free expansion slots, or you have a notebook, you'll need a USB tuner. Many USB tuners require USB2, but any PC bought in the past five years should support this. Again, check the manual.

SIGNAL LOSS

Digital TV is broadcast in the UK under the Freeview brand. This uses the Digital Video Broadcasting – Terrestrial (DVB-T) standard. There are a wide range of channels available, divided into six groups called

multiplexes. You can use the postcode checker at www.freeview.co.uk to check the reception in your area. If you can receive a digital signal, we highly recommend you get a DVB-T tuner.

If you can't receive DVB-T broadcasts, you'll have to rely on the old analogue signal, which carries only five channels. However, as this will be phased out over the next five years, we haven't tested any analogue-only tuners. Instead, there are five hybrid analogue/digital tuners that will see you through the move to DVB-T.

Picture quality for DVB-T broadcasts depends on the MPEG2 decoder used. Some do a better job than others. We tested analogue reception with a rather poor rooftop antenna, so the sensitivity of the tuner itself makes a difference. We've highlighted reception issues where necessary in the reviews.

TUNER SANDWICH

A single tuner is sufficient for occasional viewing, but if you intend to use your PC for most of your TV viewing, a dual tuner is a great idea. This lets you record one programme while watching another, and some even let you record two programmes at once. There are four dual tuners in the test, and the extra flexibility they provide is detailed in the individual reviews.





WARM RECEPTION

Most of the USB tuners here come with mini antennas, the idea being that you can receive broadcasts anywhere. In practice, it's very hard to get a signal from such an aerial unless you live right next to a transmitter. A poor-quality DVB-T signal will suffer from dropped frames and coloured blocks, while analogue reception will be blighted by ghosting and noise.

If you want to receive analogue signals, and you don't have a rooftop aerial, we suggest you buy a powered portable antenna. For DVB-T broadcasts, we highly recommend Terratec's Diversity tuner. This uses its dual tuners to receive the same channel, which can greatly improve reception with its mini antennas.

As well as receiving TV broadcasts, six of the TV tuners here also capture video from analogue sources. This means you can save old video tapes to your PC and archive them to DVD. All such cards capture composite video, while some also capture superior S-video footage. See the table on page 121 for more details.

SOFTER SIDE

One of the most important aspects of any TV tuner is the software that accompanies it. Good TV tuner software should be easy to use and have self-explanatory icons for its main controls. All the TV tuners here are capable of timeshifting live TV, scheduling recordings and displaying an

electronic programme guide (EPG). But they vary massively in how easy they are to use.

A good EPG makes huge difference to your enjoyment of TV. After all, if you don't know what's on, how can you watch or record it? We've made notes on the various EPGs in the individual reviews. The Hauppauge, Pinnacle and Terratec tuners can use the subscription TVTV service instead; see the box below for more details.

MEDIA CENTER

Most of the TV tuners in the group are compatible with Microsoft's Media Center application, which comes with Windows XP Media Center Edition and Windows Vista Home Premium. It's an excellent piece of software with a crisp, easy-to-use interface and an excellent

timeline EPG. We think it's superior to any of the software provided by the tuner manufacturers.

If you plan to use Media Center, you can disregard our comments on software in the reviews. Also bear in mind that Media Center will use any installed MPEG2 codec, so DVB-T picture quality may vary from what we saw.

POWER UP

You may not want to leave your PC on all day just to record a half-hour TV programme. AVerMedia's Super 007, Compro's U2700 and Terratec's Diversity can all wake your PC from hibernate or standby to record a programme. Compro's E700 can even power up your PC from a shutdown state. If you set your PC's power settings correctly, it's easy to get your PC to shut down or hibernate again afterwards.

Get with the programme TVTV explained

TVTV is an EPG that is compatible with TV tuners from several major manufacturers, including Hauppauge, Pinnacle and Terratec. It provides 21 days' worth of listings, so you can plan your recordings well in advance, and powerful search options help you find the kind of programmes you like. It also lets you record entire series with a single click.

Because it's online, you can access your TVTV account from any internet-connected

PC or even from a WAP-enabled mobile phone. Then you can select programmes for recording, and this information is sent to your PC and added to your scheduled recordings automatically. It's great if you're working late and you realise you won't make it home on time for your favourite show.

You need to subscribe to use the service, and this costs £15 a year. For more details go to www.tvtv.co.uk.

This month

Digital-Only Tuners

KWORLD

PlusTV DVB-T 380U

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GENIUS

TVGo DVB-T02Q MCE

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PINNACLE

PCTV DVB-T Flash Stick

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Analogue/Digital Tuners

TWINHAN

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FREECOM

DVB-T & Analog TV USB Stick

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AVerTV Hybrid Super 007

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Twin Tuners

HAUPPAUGE

WinTV NOVA-T-500

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COMPRO

VideoMate E700

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AVERMEDIA

AVerTV Duo Hybrid PCI-E

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TERRATEC

Cinergy DT USB XS Diversity

Page 120



KWORLD PlusTV DVB-T 380U

★★★★★

£22 inc VAT

KWorld's USB stick is the joint-cheapest tuner in the test, along with TwinHan's TerD+A. Part of the stick slides up to cover the USB connector, which should protect it from knocks while it's not in use. However, the end is still exposed to dust and gunk. On the opposite end is a full-size RF input, so you don't have to fiddle with adaptors. A mini antenna is provided, but you tend not to get good reception from these unless you have a diversity tuner such as the Terratec Cinergy. No remote control is included.

This tuner works with Windows XP and Vista, as well as Media Center. It found all the available DVB-T channels, but there's no way to reorganise them. Picture quality is decent, with only the usual MPEG2 compression artefacts.

The software resembles Media Center, although it doesn't look nearly as slick, with no fading or transparent windows. You can browse video files and photos using the same interface. Unfortunately, there are no controls attached to the TV window, so you have to exit the full screen mode to access them.

The EPG doesn't use our preferred timeline layout. Instead, you get a list of programmes for a single channel at a time. You can schedule recordings from this list, but these are not marked on it for future reference.

This is a very inexpensive TV tuner and it's ideal if you just want to watch the occasional programme. It's also a great choice if you need a tuner to use with Media Center on your notebook.



SUMMARY

- ✓ Cheap; full-sized RF input
- ✗ Poor EPG; no remote control

EXTERNAL TV TUNER Single digital tuner, USB Hi-Speed interface, RF input
PART CODE TV-KWO-DVBT380U
SUPPLIER www.misco.co.uk
DETAILS www.kworld.com.tw/uk

GENIUS TVGo DVB-T02Q MCE

★

£30 inc VAT

Genius's TVGo costs £8 more than KWorld's tuner. It comes with a simple cap to protect the connector, and the RF input needs an adaptor to connect a standard aerial lead. Losing either of these could be a real pain.

The supplied software comes on an 8cm DVD, so those with slot-loading optical drives may have trouble. For everyone else, installing the drivers and software is easy, and the TVGo is compatible with XP, Vista and Media Center. It found all the available channels, but the TV and radio channels were all mixed together and had to be sorted manually. Picture quality was acceptable, with only the usual MPEG2 artefacts visible.

The interface is rough round the edges – literally, in some respects, as the control panel has a pixellated edge. Changing channel is slow and the channel controls work unconventionally, so you have to push the channel-down button to go from BBC1 to BBC2. A seven-day EPG is provided, but it is frustratingly slow to download the necessary programme information.

There are no controls on the TV window, so you have to return from full screen to a windowed display to access them, or left-click and use a text menu. The mini remote control is a better alternative, but it has no timeshifting controls due to the limited space.

This tuner has little to recommend it. If you're looking for a cheap DVB-T USB Tuner, the KWorld PlusTV is a much better choice.



SUMMARY

- ✓ Easy to set up
- ✗ Frustrating EPG

EXTERNAL TV TUNER Single digital tuner, USB Hi-Speed interface, RF input
PART CODE 32410041101
SUPPLIER www.microdirect.co.uk
DETAILS www.geniusnet.co.uk

PINNACLE PCTV DVB-T Flash Stick

★★★★★

£50 inc VAT

Pinnacle's PCTV Flash Stick combines 1GB of flash memory with a DVB-T tuner. The flash memory is partitioned; part of it carries the tuner's device driver and software, while the remaining 776MB can store recorded programmes or any other files.

To get it working, you need to install the software; simply plug in the stick and launch the installer. It scans for channels and divides them into radio and TV. It doesn't provide channels in the traditional order of BBC1, BBC2, ITV1 and so on, but you can easily reorganise them.

Picture quality is good. The compression artefacts look less prominent than usual, resulting in a smoother-looking image. The interface is clean and simple, making it easy to use. The remote is compact but better than the other mini-remotes as it has proper buttons.

The EPG provides only a pop-up box showing a text list of programmes for one channel at a time. You can capture video directly to DVD or DivX, the latter being useful for squeezing programmes on to the small amount of flash memory. Recording MPEG2 directly on to the stick will fill it up in less than an hour.

A tuner with its own storage is an interesting idea, but who needs one? You still have to install software, so you can't use it on a PC for which you don't have administrator rights. There isn't enough space to be useful, either. This is a rather expensive oddity.



SUMMARY

- ✓ Built-in storage and software
- ✗ Expensive; poor EPG

EXTERNAL TV TUNER Single digital tuner, USB Hi-Speed interface, RF input
PART CODE A0139592
SUPPLIER www.microwarehouse.co.uk
DETAILS www.pinnaclesys.com

NEBULA ELECTRONICS DigiTV PCI

★★★★★

£73 inc VAT

Despite only having a single tuner, the DigiTV PCI costs more than any of the twin TV tuners in the group. It provides excellent software, though, with a features list that outdoes even Microsoft's Media Center. The PCI card has a composite video input, so you can capture analogue video to MPEG2. The remote is big and clearly labelled, so it's easy to find the controls you need.

You have to install the drivers using Windows's Add Hardware wizard, which is a pain. The software doesn't fully support Vista, and only a beta version is available. Once the software is installed, it scans for channels and divides them into TV and radio broadcasts. Unlike the other tuners here, it sorts them into the traditional order of BBC1, BBC2, ITV1 and so on. It's also the only tuner here to work with DVB-T teletext channels.

The software is very easy to use. You can have a simple TV window with drop-down text lists of channels and options. Alternatively, you can opt for a full-screen Media Center style interface that's optimised to work with the remote control. With this, you get an easy-to-browse timeline EPG. Scheduled programmes are marked on the EPG in red and there's even the option to record whole series with a single selection.

There's a conditional access module available should you want to receive subscription channels such as Setanta Sports, plus you can multi-cast programmes across a network to other PCs. This is an excellent choice for TV enthusiasts, or those who love to tinker with technology.



SUMMARY

- ✓ Great interface; lots of options
- ✗ Expensive for a single tuner

INTERNAL TV TUNER Single digital tuner, PCI interface, RF and composite inputs
SUPPLIER www.nebula-electronics.com
DETAILS www.nebula-electronics.com

TWINHAN TerD+A

★★★★

£22 inc VAT

TwinHan's TerD+A won our last TV tuner Labs in Shopper October 2006, thanks to its excellent PowerCinema software. However, since then Twinhan has switched to bundling its own software with the tuner. The PCI card has S-video and composite inputs for capturing analogue video to MPEG2 files, and the bundled remote is big, clearly labelled and easy to use.

The drivers and software are easy to install, but they don't work under Vista. The card comes with BDA drivers, though, so it'll work with Media Center in both XP and Vista. The scan tool didn't run automatically, so we had to find it ourselves. DVB-T picture quality was average, while the analogue reception was good with only a little ghosting and little noise.

The software is poorly designed, however. It is cluttered with small icons, it's confusing to use, and it can be hard to tell what's going on when you're timeshifting, recording or pausing live TV. Channel changing was slow, but it's easy to switch between DVB-T, analogue and video inputs.

The EPG provides a list of channels, and you select one to see a list of upcoming programmes. It's not as user-friendly as a timeline layout. You can schedule recordings from these lists, but they aren't marked on the EPG for future reference.

Using the TerD+A's new software is likely to drive you to distraction. With Vista not yet supported, this tuner has gone from a Best Buy to something we'd recommend only to the handful of people who need a PCI tuner for a Windows XP Media Center system.

SUMMARY

- ✓ Cheap; good analogue reception
- ✗ Poor interface and EPG

INTERNAL TV TUNER Single analogue/digital tuner, PCI interface, RF, FM, S-video, composite and IR inputs
PART CODE TERD+A3054
SUPPLIER www.saverstore.com
DETAILS www.twinhan.com



FREECOM DVB-T & Analog TV USB Stick

★★★★★

£39 inc VAT



Freecom's USB stick is a hybrid digital/analogue tuner with a sturdy black casing. The RF input uses an adaptor to attach a full-sized RF lead, so you must be careful not to lose it. The mini antenna has the usual magnetic base, but also comes with a handy suction cup. Without diversity support, such a small aerial is inadequate for digital TV. Analogue reception was also poor, with lots of ghosting and noise. With a rooftop antenna, some ghosting still remained.

The drivers and software install in one easy package. The software supplied is Arcsoft Totalmedia 3, which looks like Media Center in many ways and can also deal with video, audio and photo files. A wizard guides you through the setup process. Radio and TV channels are mixed together, but you can re-order them without too much difficulty.

The interface is easy to use and self-explanatory. However, the bundled mini remote doesn't have enough buttons to properly navigate the software's various menus and EPG. The EPG shows the current programme on a list of channels and future programmes on a single channel. It's not quite a proper timeline, but it does mark scheduled recordings for you. Alternatively, you can use the subscription EPG TVTV; see our 'Get with the programme' box on page 115 for details.

This is far from being the cheapest tuner here, but its interface is easy to understand and all the features work as expected. A DVB-T only version (part code 25451) is also available for the bargain price of £25.



SUMMARY

- ✓ Easy-to-use interface
- ✗ No timeline EPG

EXTERNAL TV TUNER Single analogue/digital tuner, USB Hi-Speed interface, RF and built-in IR inputs
PART CODE 27442
SUPPLIER www.cclonline.com
DETAILS www.freecom.com

AVERMEDIA AVerTV Hybrid Super 007

★★★★★

£45 inc VAT

This half-height PCI card is perfect for slender media centre PCs. It comes with full-sized and half-height backing plates, so it will fit standard desktop and tower cases. The S-video input takes composite video, though no adaptor is supplied. There's an audio input for capturing sound along with video, plus a separate FM input so you don't have to switch aerials to swap between TV and FM radio.

Setup was straightforward, and it quickly found all the channels for DVB-T and analogue broadcasts. There are some small buttons on the floating toolbar, but the icons are self-explanatory. Commonly used controls pop up at the bottom of the TV window when required.

The EPG appears in a small window, which can't be resized. It provides a timeline view, or you can shift to viewing programmes by channel with descriptions. You can schedule recordings from the EPG and the software will power up your PC from standby or hibernate to record them. You can't access the EPG while timeshifting, so you can't pause the programme you're watching to check the listings.

Analogue picture quality from our roof-top aerial was good, with only minor ghosting. Digital picture quality was good, with the usual compression artefacts looking less prominent. Video can be captured to a variety of file formats, but not H.264 or DivX.

This is a decent hybrid tuner at a good price.

SUMMARY

- ✓ Easy-to-use interface
- ✗ EPG problems when timeshifting

INTERNAL TV TUNER Single analogue/digital tuner, PCI interface, RF, FM, S-video, composite, minijack, FM and IR inputs
PART CODE M135H
SUPPLIER www.mediaatlantic.com
DETAILS www.averm.co.uk



COMPRO VideoMate U2700

★★★★

£45 inc VAT

Most modern USB tuners use a stick design, but Compro's VideoMate U2700 is housed in a small but sturdy black box with lots of ports. One of these is a power socket, which must be connected to a USB port. Compro provides a special lead so the USB connection and power can come from a single port, but it still results in a mess of leads.

The RF input requires an adaptor to fit a full-sized RF connector. The video input comes with adaptors for both composite and S-video inputs, while the audio input can take a standard minijack input, or there's an adaptor for phono leads. Video can be captured only as MPEG1 or MPEG2 at a variety of settings. Analogue reception was unwatchable using the mini antenna, but looked fine with a rooftop antenna.

The interface consists of a control panel and separate viewing window. The controls are small and fiddly to use, and often have unhelpful icons to identify them. To switch between the various video inputs, you click on the current input's name, and it cycles slowly to the next one.

The EPG displays only the currently viewed multiplex of channels, making it hard to plan an evening's viewing. You can't access the EPG when recording or timeshifting a show. It will wake your PC from standby to record a programme, though.

The U2700 is a compact tuner with plenty of options for capturing analogue video and audio. However, the poor software lets it down.



SUMMARY

- ✓ Video capture on notebook
- ✗ Poor EPG and interface

EXTERNAL TV TUNER Single analogue/digital tuner, USB Hi-Speed interface, RF, S-video, composite, minijack and built-in IR inputs
PART CODE U2700
SUPPLIER www.aria.co.uk
DETAILS www.comprousa.com

HAUPPAUGE WinTV NOVA-T-500

★★★★

£55 inc VAT



Most dual tuners use the faster PCI-Express x1 slot, but this one from Hauptauge uses a PCI slot and so will be compatible with almost any desktop PC. The card has a single RF input that feeds both tuners, so you don't have to fiddle with splitters or adaptors, either.

Installation takes a while as the software is divided into numerous smaller applications, such as separate IR and scheduler programmes. It found all the DVB-T channels quickly, though, and we found it quite easy to reorder them to our liking.

The software supplied is the ancient WinTV 2000, which has a drab grey interface. The controls are easy to grasp, but you have to use the windowed mode to get at them. Channel changes are slow, but it does display now and next information. WinTV 2000's dual-tuner support is poor compared to the other software here. It doesn't let you watch two programmes at once, but you can record two programmes simultaneously. To do this, you have to use the background scheduler. However, this won't let you watch the programme from the beginning until the recording has finished.

The EPG is a separate application that opens in a browser window. It displays as a timeline and you can schedule recordings from it, but it's not as convenient as using an EPG integrated into the main interface.

The WinTV 2000 software is clunky. However, this card is ideal for use with Media Center.

SUMMARY

- ✓ Great for Media Center
- ✗ Poor software

INTERNAL TV TUNER Twin digital tuners, PCI interface, RF input
PART CODE 289
SUPPLIER www.pixmania.co.uk
DETAILS www.hauptauge.co.uk

COMPRO VideoMate E700

★★★★

£60 inc VAT



As well as having dual tuners, Compro's VideoMate E700 can power up your PC to record scheduled programmes. Installation is a little more complicated than with most tuners, as you have to use the provided lead to route your PC's power switch through the card. The card can then turn your PC on and off, so you don't need to leave it running to record programmes. The software can also wake your PC from standby and hibernate if preferred.

Unfortunately, the EPG isn't much help when it comes to scheduling recordings. It provides only a text listing of the programmes on the currently viewed multiplex. You can't access it at all when recording or timeshifting a programme.

You can use the dual tuner to record one programme while watching another. To watch two at once, you have to open a secondary viewing window. You can't pause or record the programme in this window, so it's not as flexible as some software. The rest of the interface is identical to that of Compro's U2700, with the same fiddly controls and tiny icons.

The E700 comes with a half-height PCI plate, so you can install it in a slender media centre chassis. It has a single RF input, so you can connect an aerial lead to both tuners without any adaptors. There's the usual input for the IR receiver, too, and the remote is big and clearly labelled, which provides some relief from the poor software.

Power-up scheduling is a welcome addition. However, the EPG lets this TV tuner down.

SUMMARY

- ✓ Power-up scheduling
- ✗ Poor EPG and interface

INTERNAL TV TUNER Twin digital tuners, PCI-Express x1 interface, RF input
PART CODE E700
SUPPLIER www.mediaatlantic.com/compro
DETAILS www.comprousa.com

AVERMEDIA AVerTV Duo Hybrid PCI-E

★★★★★

£65 inc VAT



This is the only dual hybrid analogue/digital tuner in the group and it can receive analogue, DVB-T and FM radio broadcasts as well as capture analogue video. The PCI-Express card has two RF inputs, which also double as FM inputs. However, no splitter is provided, so to use the dual tuners with a single aerial you'll need to get one yourself. A breakout lead from the card has all the other inputs, including S-video, composite and phono.

A wizard guides you through the scanning process, letting you skip the bits you don't need. Radio and TV channels are helpfully separated. Analogue reception was acceptable from our test aerial, with only a little ghosting and noise evident. The software interface is slick and resembles Media Center in many ways. You can also browse video, audio and photo files using the same interface. The remote control is one of the best here. It's big, with a good layout and clearly labelled buttons.

The EPG uses a timeline layout, so it's easy to browse schedules. You can schedule recordings, but they aren't marked on the EPG for future reference. You can record two programmes at once, but you must select the second tuner to do this.

In other respects, dual tuner support is excellent. You can timeshift and record two programmes simultaneously. If you need dual tuners and analogue video capture, this TV tuner is a great choice.

SUMMARY

- ✓ Good dual-tuner support
- ✗ No aerial splitter provided

INTERNAL TV TUNER Twin analogue/digital tuners, PCI-Express x1 interface, 2x RF, S-video, composite, phono and IR inputs
PART CODE A177
SUPPLIER www.mediaatlantic.com
DETAILS www.avermedia.co.uk

TERRATEC Cinergy DT USB XS Diversity

★★★★★

£66 inc VAT



Terratec's USB dual tuner supports diversity, which uses the two tuners on the same channel to improve reception. You get a pair of mini antennas for this purpose. These have magnetic bases, or you can use the supplied sucker cups. The stick has two mini RF inputs that use adaptors; it comes with a splitter lead so you can easily connect a rooftop antenna to both tuners.

Setup and scanning were easy. The DVB-T channels were automatically divided into radio and TV stations. By activating diversity mode, you get better reception in areas of poor signal strength. With diversity turned off, both of the tuners can be used independently or with other dual tuners.

The software is easy to use, but there are no controls attached to the TV window, so you must bring up the control panel over the programme. The EPG displays only the time and programme name for one channel at a time. However, scheduled recordings are marked on the EPG for future reference. Alternatively, use the TVTV subscription service; a one-year free trial is provided.

Dual-tuner support is very flexible. You can watch, timeshift or record multiple channels in one multiplex on one tuner, while simultaneously using the second tuner to do the same on a second multiplex.

Terratec's Cinergy Diversity was our favourite TV tuner coming into this group test, and we see no reason to change our mind.

SUMMARY

- ✓ Diversity reception; dual tuners
- ✗ No timeline EPG

EXTERNAL TV TUNER Twin digital tuners, USB Hi-Speed interface, 2x RF and built-in IR inputs
PART CODE 10456
SUPPLIER www.pixmania.co.uk
DETAILS <http://uk.terratec.net>

DIGITAL-ONLY TUNERS

ANALOGUE/
DIGITAL
TUNERS

MANUFACTURER	KWORLD	GENIUS	PINNACLE	NEBULA ELECTRONICS	TWINHAN	FRECOM
Model	PLUSTV DVB-T 380U	TVGO DVB-T02Q MCE	PCTV DVB-T FLASH STICK	DIGITV PCI	TERD+A	DVB-T & ANALOG TV USB STICK
Rating	★★★★	★	★★★	★★★★★	★★★	★★★★★
FEATURES						
Number of tuners	1	1	1	1	1	1
Tuner type	Digital	Digital	Digital	Digital	Digital/analogue	Digital/analogue
Diversity	No	No	No	No	No	No
Interface	USB Hi-Speed	USB Hi-Speed	USB Hi-Speed	PCI	PCI	USB Hi-Speed
Input connectors	RF	RF	RF	RF, composite	RF, FM, S-video, composite, IR	"RF, built-in IR"
Output connectors	None	None	None	RF	None	None
Remote control	No	Yes	Yes	Yes	Yes	Yes
Extras	Mini antenna	Mini antenna	Mini antenna	None	None	Mini antenna
EPG	7-day	7-day	7-day	7-day	7-day	7-day
Teletext	None	None	None	DVB-T	None	None
Radio	DVB-T	DVB-T	DVB-T, internet	DVB-T	DVB-T, FM	DVB-T
Recording codecs	MPEG2	MPEG2	MPEG2, DivX	MPEG2	MPEG2	MPEG2
Software	HyperMedia Center 2	Unknown	TVCenter 4	Digi-TV HD 3.7	DigitalTV 3	Arcsoft TotalMedia 3
Windows compatibility	XP/Vista/Media Center	XP/Vista/Media Center	XP/Vista	XP/Media Center	XP/Media Center	XP, Vista, Media Center
Minimum PC specification	1.6GHz processor, 256MB RAM, DirectX 9 graphics card, USB2 port	1.4GHz processor, 256MB RAM	2GHz processor, 256MB RAM, DirectX 9 graphics card	1GHz processor, 64MB RAM	600MHz processor, 128MB RAM, DirectX 9 graphics card	2GHz processor, 256MB RAM, DirectX 9 graphics card
BUYING INFORMATION						
Price including VAT	£22	£30	£50	£73	£22	£39
Supplier	www.misco.co.uk	www.microdirect.co.uk	www.microwarehouse.co.uk	www.nebula-electronics.com	www.saverstore.com	www.cclonline.com
Details	www.kworld.com.tw/uk	www.geniusnet.co.uk	www.pinnaclesys.com	www.nebula-electronics.com	www.twinhan.com	www.freecom.com
Part code	TV-KWO-DVB-T380U	32410041101	A0139592	NONE	TERD+A3054	27442

TWIN TUNERS



MANUFACTURER	AVERMEDIA	COMPRO	HAUPPAUGE	COMPRO	AVERMEDIA	TERRATEC
Model	AVERTV HYBRID SUPER 007	VIDEOMATE U2700	WINTV NOVA-T-500	VIDEOMATE E700	AVERTV DUO HYBRID PCI-E	CINERGY DT USB XS DIVERSITY
Rating	★★★★	★★★	★★★	★★★	★★★★	★★★★★
FEATURES						
Number of tuners	1	1	2	2	2	2
Tuner type	Digital/analogue	Digital/analogue	Digital	Digital	Digital/analogue	Digital
Diversity	No	No	No	No	No	Yes
Interface	PCI	USB Hi-Speed	PCI	PCI-Express x1	PCI-Express x1	USB Hi-Speed
Input connectors	RF, FM, S-video, composite, minijack, IR	RF, S-video, composite, minijack, built-in IR	RF	RF	2x RF, S-video, composite, phono, IR	2x RF, built-in IR
Output connectors	None	None	None	None	None	None
Remote control	Yes	Yes	Yes	Yes	Yes	Yes
Extras	Half-height PCI backing plate	Mini antenna, minijack-to-phono adaptor	None	Half-height PCI backing plate	None	2x mini antenna
EPG	7-day	7-day	7-day	7-day	7-day	7-day
Teletext	Analogue only	Analogue only	None	None	Analogue only	None
Radio	DVB-T, FM	DVB-T	DVB-T	DVB-T	DVB-T, FM	DVB-T
Recording codecs	MPEG2, MPEG1, WMA, Wav, AVI	MPEG2, MPEG1	MPEG2	MPEG2	MPEG2, MPEG1, AVI, Wav, H.264	MPEG2
Software	AVerTV 6	ComproDTV 3	WinTV 2000	ComproDTV 3	AVerMedia Center	Terratec Home Cinema 5
Windows compatibility	XP/Vista/Media Center	XP/Vista/Media Center	XP/Vista/Media Center	XP/Vista/Media Center	XP/Vista/Media Center	XP/Vista/Media Center
Minimum PC specification	2.4GHz processor, 256MB RAM, DirectX 9 graphics card	2.4GHz processor, 256MB RAM, DirectX 9 graphics card, USB2	1.7GHz processor	1.7GHz processor, 256MB RAM, DirectX 9 graphics card	2.6GHz processor, 512MB RAM, DirectX 9 graphics card	2GHz processor, 512MB RAM, DirectX 9 graphics card, USB2
BUYING INFORMATION						
Price including VAT	£45	£45	£55	£60	£65	£66
Supplier	www.mediaatlantic.com	www.aria.co.uk	www.pixmania.co.uk	www.mediaatlantic.com/compro	www.mediaatlantic.com	www.pixmania.co.uk
Details	www.averm.co.uk	www.comprousa.com	www.hauppage.co.uk	www.comprousa.com	www.averm.co.uk	http://uk.terratec.net
Part Code	M135H	U2700	289	E700	A177	10456

Labs verdict TV tuners

There's a lot to consider when choosing a TV tuner, and a single product won't please everybody. However, a couple in this test stood out from the rest.

Freecom's DVB-T & Analog TV USB Stick is a well-designed product that can be used by both notebook and desktop users, whether they need to receive analogue or digital broadcasts. It's reasonably priced and comes with software that is easy to

get working and to use. It wins our Budget Buy award.

If you want a bit more flexibility in your TV viewing, it's worth investing extra in Terratec's Cinergy DT USB XS Diversity. This dual tuner lets you record one programme while watching another, plus you can use the diversity mode to get reception where other tuners fail. It has good software and a great remote. It certainly deserves our Best Buy award.



FRECOM
DVB-T & Analog
TV USB Stick

★★★★★



TERRATEC
Cinergy DT USB
XS Diversity

★★★★★

